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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/594,327

09/27/2006

Ryoji Noyori

129542

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OLIFF & BERRIDGE, PLC

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ALEXANDRIA, VA 22320-4850

EXAMINER

KEYS, ROSALYND ANN

ART UNIT

PAPER NUMBER

1621

MAIL DATE

DELIVERY MODE

08/21/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/594,327	NOYORI ET AL.	
	Examiner	Art Unit	
	Rosalynd Keys	1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 July 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-19 and 21-31 is/are pending in the application.
- 4a) Of the above claim(s) 12, 14-16, 18, 19, 21, 22, 24, 25, 27, 28, 30 and 31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11, 13, 17, 23, 26, and 29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of Claims

1. Claims 1-10 and 20 have been cancelled.

Claims 11-19 and 21-31 are pending in this application.

Claims 12, 14-16, 18-19, 21, 22, 24, 25, 27, 28, 30 and 31 are withdrawn from consideration as non-elected subject matter.

Claims 11, 13, 17, 23, 26, and 29 are rejected.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 6, 2009 has been entered.

Response to Arguments

3. Applicant's arguments with respect to claims 11, 13, 17, 20, 23, 26, and 29 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

Art Unit: 1621

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 11, 13, 17, 23, 26, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al (US 6,686,505 B2) in view of Ikariya et al. (JP 11-189600)

Applicants claim a process for producing an optically active alcohol comprising placing a metal complex and a ketone in a polar solvent and stirring the mixture under pressurized hydrogen to hydrogenate the ketone compound to thereby obtain an optically active alcohol.

Determination of the scope and content of the prior art

(MPEP §2141.01)

Watanabe et al. teach use of the specific catalyst as seen in claim 1 in the process for the production of an optically active alcohol in the presence or absence of a base with a hydrogen donor (see entire disclosure, in particular column 3, line 59 to

Art Unit: 1621

column 7, line 18). It is taught that the hydrogen donors can include alcohols such as methanol and ethanol (see column 21, lines 56-60). It is taught that the hydrogen donors can be used in combination (see column 21, lines 60-62). It is taught that the asymmetric reduction reaction may be carried out in the absence of a base when an alcohol such as 2-propanol is used as the hydrogen donor (see column 22, lines 16-18). It is taught that normally the hydrogen donor itself is used as the reaction solvent (see paragraph 22, lines 42-43). Ketones suitable for starting materials include those of the claimed invention (see column 8, line 60 to column 18, line 13).

Ikariya et al. teach that it is known in the art that asymmetric hydrogenation of ketones could be accomplished using a ruthenium catalyst with pressurized hydrogen or a hydrogen donor in the absence of a base. (See entire computer generated English translation, in particular paragraphs 0015 and 0040-0043). In paragraph 0042 alcoholic solvents, such as ethanol are taught to be useful as reaction solvents.

Ascertainment of the difference between the prior art and the claims

(MPEP §2141.02)

The difference between the prior art and the claims is that Watanabe et al. teach the use of hydrogen instead of a hydrogen donor to hydrogenate the ketones.

Finding of prima facie obviousness

Rational and Motivation (MPEP §2142-2143)

Nonetheless, the instant claims are prima facie obvious in view of the teachings of Watanabe et al. in combination with Ikariya et al. The instant invention involves a simple substitution of one known element for another. One having ordinary skill in the

Art Unit: 1621

art at the time of the instant invention would have found it obvious to utilize pressurized H₂, as taught by Ikariya et al., as the source of hydrogen in the process taught by Watanabe et al. because “a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense.” KSR International Co. v. Teleflex Inc., 550 U.S.____, 82 USPQ2d 1385, 1395-97 (2007).

One having ordinary skill in the art would have found it obvious to utilize the hydrogen in combination with other hydrogen donors, including methanol and ethanol, since Watanabe et al. teach that hydrogen donors may be used singly or in combination. The ordinary skilled would have been further motivated to utilize the hydrogen in combination with an alcohol such as methanol or ethanol, since the methanol and ethanol can also act as a solvent in addition to its use as a hydrogen donor (see paragraph 0042 of Ikariya et al. and column 22, lines 42-43 of Watanabe et al.)

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rosalynd Keys whose telephone number is (571)272-0639. The examiner can normally be reached on M & T 5:30 am-7 am & 9:30 am-4:30 pm: W-F 8:00 am-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Sullivan can be reached on 571-272-0779. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1621

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rosalynd Keys/
Primary Examiner, Art Unit 1621

August 18, 2009